UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

NXP USA, INC., and NXP B.V., Plaintiffs, v. IMPINJ, INC., Defendant.	CASE NO. 2:20-cv-01503-JHC ORDER RE: CROSS-MOTIONS FOR PARTIAL SUMMARY JUDGMENT

I

INTRODUCTION[1]

Plaintiffs NXP USA, Inc. and NXP B.V. (collectively, "NXP") brought this patent-infringement action against Defendant Impinj, Inc., alleging infringement of a group of patents relating to radio frequency identification ("RFID") technology and electric circuit design.

The parties cross-move for partial summary judgment on infringement (and non-infringement), validity (and invalidity), and damages. *See* Dkt. ## 282, 319, 343 (NXP's motion,

[1] The Court previously filed a sealed version of this order. *See* Dkt. # 380. The Court then asked the parties to indicate which portions, if any, of the order must be redacted to protect confidential and proprietary business information. Dkt. # 381. After hearing from the parties, *see* Dkt. # 407, the Court hereby publishes this redacted version of the order.

Impinj's response, and NXP's reply); Dkt. ## 294, 332, 355 (Impinj's motion, NXP's response, and Impinj's reply).[2]

The motions seek summary judgment of infringement (and non-infringement) of U.S. Patent Number 7,257,092 (the '092 Patent) and U.S. Patent Number 7,795,951 (the '951 Patent). Along with these common issues, NXP's motion seeks a judgment about the validity of U.S. Patent Number 7,347,097 (the '097 Patent) and the availability of acceptable, non-infringing alternatives for purposes of damages. Impinj's motion seeks summary judgment of non-infringement of the '097 Patent and seeks summary judgment of invalidity for the '092 Patent.

For the reasons below, the Court GRANTS each motion in part and DENIES each motion in part. The Court RESERVES ruling on NXP's damages argument to consider it along with the damages issues raised in other motions.

II

BACKGROUND

A. Technology Background

RFID is a type of contactless wireless communication that uses electromagnetic frequencies to transmit identification information. *See generally* Dkt. # 220 (technology tutorial). RFID systems are used, for example, in retail stores for tracking merchandise and in warehouses for tracking inventory. *Id.* at 6. They are even used in U.S. passports and in various medical technologies. *Id.* RFID systems typically include a "data carrier" (or "tag"), which can attach to an object, and a "communication station" (or "reader"), which receives information from the data carrier through radio waves. The data carrier wirelessly transmits data to the

[2] The Court generally refers to the sealed version of each filing throughout this order. The unsealed versions (which contain page numbers that correspond to the sealed versions) can be found at the following docket entries: Dkt. ## 277, 316, 340 (NXP's motion, Impinj's response, and NXP's reply); Dkt. ## 284, 325, 347 (Impinj's motion, NXP's response, and Impinj's reply).

communication station, which the reader uses to identify the object. *Id.* at 7. The data carrier often contains circuitry and a transmission means like an antenna. *Id.* at 8. Data carriers also typically have some form of memory that stores information. *Id.*

B. The Patents

Three patents remain at issue.[3]

1. The '092 Patent

The '092 patent describes techniques for communicating between a "communication station" and a "data carrier." '092 Patent at 1:5–8. Prior art methods used a two-step process for communication between a data carrier and a communication station. The communication station would first conduct an "inventorization procedure" during which the communication station would identify all the data carriers within its range. *Id.* at 1:10–38. After the inventorization procedure, the data carrier would transmit "useful data" to the communication station upon request. *Id.* at 1:38–47. The "disadvantage" of this two-step method was that "it [took] a relatively long time" for the "useful data" to become usable by the communication station. *Id.* at 1:42–44.

The '092 Patent purports to improve upon the prior art by using a communication procedure in which the "identification data block" and the "useful data" are transmitted simultaneously. *Id.* at 11:7–17 ("[T]he invention is distinguished in that not only are parts of the identification data blocks IDB transmitted into the communication station 1 in the course of carrying out an inventorization procedure, but that during the inventorization procedure the specific useful data n×UDB desired and/or required in the communication station 1 are also

[3] NXP's initial complaint asserted infringement of eight of patents. Dkt. # 1. The parties narrowed their dispute to six patents (Dkt. # 176 at 2 & n.1), and the Court's order granting summary judgment of non-infringement to Impinj on three patents (Dkt. ## 242, 248) further narrowed this action to the three patents still at issue.

simultaneously transmitted."); Dkt. # 135 at 14. This simultaneous transmission shortens the time it takes for the communication station to obtain the "useful data" stored in the data carriers. '092 Patent, 3:51–59.

2. The '951 Patent

Some circuits within RFID tags operate using little power because they receive power only through the wireless signal transmitted to them. *See* Dkt. # 220 at 13. Some circuit components, however, benefit from higher voltages, while others benefit from lower voltages. *Id.*; '951 Patent, 1:10–24. Therefore, many circuits contain "voltage multiplier circuits" to modify the voltage. Dkt. # 220 at 13. The purpose of a voltage multiplier is to increase or decrease a supply voltage to a desired level. Dkt. # 149 at 13.

The '951 Patent describes a particular voltage multiplier circuit that "advantageously" enables multiplication of the voltage to a range of different voltages, including voltages both above and below the supply voltage. '951 Patent at 1:11–24, 1:49–63. The invention "control[s]" the generated voltage amplitude, producing a "regulated" voltage as it moves through the circuit components. *Id.* at 2:2–6.

The voltage multiplier described by the '951 Patent has several "multiplier stages." *Id.* at 2:16–17. The voltage multiplier also includes a "feedback bias control circuit" that is coupled to receive the output of the voltage multiplier stages. *Id.* at 4:17–44, 6:1–33, Abstract. The feedback bias control circuit helps control or regulate the voltage multiplier by providing a "feedback bias control signal," which is then fed to "regulated clocks" and to an "input level regulator." *Id.* at 3:60–61, 3:23 ("input level regulator" with "a feedback bias control input"). The input level regulator outputs a signal to the first multiplier stage. *Id.* at 3:22–32. The input level regulator "advantageously enables regulation of a voltage to a range of voltage levels" including voltages equal to or lower than the supply voltage. *Id.* at 3:24–28.

3. The ’097 Patent

Many data carriers contain storage systems used to store information temporarily. These carriers can, for example, temporarily store an indication of successful communication with a communication station. Dkt. # 137 at 21. The information is stored and represented “by a value of an information voltage that arises at the capacitor.” ’097 Patent at 1:45–47. The ’097 Patent purports to solve a problem identified in the prior art: The information voltage would continuously decline due to “unavoidable leakage currents in the circuit.” *Id.* at 1:62–2:1. This decline in voltage would lead to an “unsatisfactory situation” because the information was “no longer able to be evaluated after only a short period of time.” *Id.* at 2:2–7.

The ’097 Patent purports to solve this problem. The invention described by the ’097 Patent provides “a substantially longer period of time during which the stored information can be ascertained with high reliability.” *Id.* at 2:34–36. This also allows the information to remain accessible if a brief supply-voltage failure occurs. *Id.* at 2:35–42. The patent achieves this in part by adding a “voltage-raising means” to the “information-voltage generating means.” *Id.* at 2:13–23; *see also* Dkt. # 135 at 17.

The specification describes the invention in more detail. It states that the carrier first receives a wireless signal, which is used to form a supply voltage. ’097 Patent at 3:27–35. The circuit produces a “control signal CS” that is “at most equal to the value of the supply voltage.” *Id.* at 3:62–63. The circuit contains “information-voltage generating means” that receive the control signal CS and uses the control signal CS to produce an “information voltage UI.” *Id.* at 3:63–66. The information-voltage generating means further consist of “voltage-raising means,” “voltage-limiting means,” and a “charging-current generating stage.” *Id.* at 4:15–29.

C. Procedural History

Following a *Markman* hearing and briefing from the parties, the Court issued a claim construction order on November 4, 2022. Dkt. # 247. On January 12, 2023, the parties submitted the motions for summary judgment at issue. *See* Dkt. ## 282, 294. The Court held oral argument on both motions on February 28, 2023. Dkt. # 370. On March 6, 2023, the Court issued a sua sponte order modifying its construction of the "voltage-raising means" term found in the '097 Patent. Dkt. # 375.

III

LEGAL STANDARDS

Issues in a patent case may be resolved at summary judgment. "Summary judgment is appropriate when the moving party demonstrates that 'there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.'" *Spigen Korea Co. v. Ultraproof, Inc.*, 955 F.3d 1379, 1383 (Fed. Cir. 2020) (quoting Fed. R. Civ. P. 56(a)). A genuine dispute exists "if the evidence is such that a reasonable jury could return a verdict for the nonmoving party." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986). In evaluating a motion for summary judgment, "[t]he court must afford all reasonable inferences and construe the evidence in the light most favorable to the non-moving party." *Vita-Mix Corp. v. Basic Holding, Inc.*, 581 F.3d 1317, 1323 (Fed. Cir. 2009) (citing *Anderson*, 477 U.S. at 255).

Infringement (or non-infringement) can be decided at summary judgment when there are no genuine disputes of fact. To prove infringement, the patentee "must establish by a preponderance of the evidence that one or more claims . . . read on the accused device[s]." *Cross Med. Prod., Inc. v. Medtronic Sofamore Danek, Inc.*, 424 F.3d 1293, 1310 (Fed. Cir. 2005). "Where the parties do not dispute any relevant facts regarding the accused product . . ., but disagree over possible claim interpretations, the question of literal infringement collapses into

claim construction and is amenable to summary judgment." *Gen. Mills, Inc. v. Hunt-Wesson, Inc.*, 103 F.3d 978, 983 (Fed. Cir. 1997). Infringement is "properly decided upon summary judgment when no reasonable jury could find that every limitation recited in the properly construed claim either is or is not found in the accused device either literally or under the doctrine of equivalents." *Gart v. Logitech, Inc.,* 254 F.3d 1334, 1339 (Fed. Cir. 2001). But if a reasonable jury could conclude that the accused device does not practice every limitation of a claim, summary judgment is inappropriate.

Similarly, patent validity can be decided at summary judgment when there is no genuine dispute of fact. "Under the patent statutes, a patent enjoys a presumption of validity, which can be overcome only through clear and convincing evidence." *Eli Lilly & Co. v. Barr Labs., Inc.*, 251 F.3d 955, 962 (Fed. Cir. 2001). Accordingly,

> a moving party seeking to *invalidate* a patent at summary judgment must submit such clear and convincing evidence of invalidity so that no reasonable jury could find otherwise. Alternatively, a moving party seeking to have a patent held *not invalid* at summary judgment must show that the nonmoving party, who bears the burden of proof at trial, failed to produce clear and convincing evidence on an essential element of a defense upon which a reasonable jury could invalidate the patent.

Id. (emphasis added).

IV

ISSUES RELATING TO THE '092 PATENT

The parties raise two issues specific to the '092 Patent. First, Impinj argues that the '092 Patent is obvious given the prior art and is thus invalid. Dkt. # 294 at 19–28. Second, both parties cross-move for summary judgment on infringement. Dkt. ## 282 at 9–18, 294 at 5–10. The Court addresses each issue in turn.

A. Additional Background: The '092 Patent

The '092 Patent describes a method of communication between an RFID communication station (or "reader") and an RFID data carrier (or "tag"). While prior art techniques transmitted "identification data" and then other useful data separately, the '092 Patent describes a system in which identification data and other "useful data" are transmitted simultaneously. The patented system accelerates the communication process, allowing the communication station to receive data from the data carrier faster. '092 Patent at 1:38–52.

Claim 1 of the '092 Patent is representative. It states:

> A method of communicating between a communication station (1) and at least one data carrier (2 (DC)), Which data carrier (2 (DC)) comprises a characteristic identification data block (IDB) and useful data (UD), by said method an inventorization procedure is carried out, the inventorization procedure may consist of successive procedure runs and consists of at least one procedure run, and after the inventorization procedure terminates, at least one part of the identification data block (IDB) of the at least one data carrier (2 (DC)) is known in the communication station (1), and by which method a transmission of specific useful data (n x UDB) is carried out from the at least one data carrier (2 (DC)) to the communication station (1) such that during the implementation of the inventorization procedure at least one part of a block region (NKP-IDB) of the identification data block (IDB) not yet known in the communication station (1) and, in addition, said specific useful data (n x UDB) are transmitted from the at least one data carrier (2 (DC)) to the communication station (1).

Id. at 17:47–65. For present purposes, it is important to observe that claim 1 requires that the tag return two types of data to the reader: (1) an "identification data block (IDB)" and (2) "specific useful data (n x UDB)." This data must be transmitted to the data carrier "during the implementation of the inventorization procedure." *Id.* at 17:59–60.

During claim construction, the Court construed two terms in the '092 Patent that relate to the issues at hand. First, the Court construed "characteristic identification data block (IDB)" to mean "identification data stored in memory." Dkt. # 247 at 12–16. The Court noted that "[w]hen broken down, the term refers to (1) a block (2) of data (3) used for identification." *Id.*

at 13. The Court did not limit the identification data to a particular kind of identification data, like a serial number. Second, the Court construed "specific useful data (n×UDB)" to mean "some, but not all, useful data (UD)." *Id.* at 16–20. The parties seemingly agree that a given data block is either part of the identification data block or is part of the identification data block, but that the two categories are mutually exclusive. *See, e.g.*, Dkt. ## 283-1 at 8, 319 at 7, 332 at 10.

B. Validity of the '092 Patent

Impinj asks the Court to hold that the asserted claims of the '092 Patent are obvious, and thus invalid. Dkt. # 294 at 19–28. According to Impinj, two prior art references—the ISO/IEC 15693-3 protocol and U.S. Patent No. 6,963,270 ("Gallagher")—render the '092 Patent obvious. *Id.* at 19. Impinj also notes that the United States Patent and Trademark Office (USPTO) has granted ex parte reexamination of the '092 Patent. *See* Dkt. # 285-7 (USPTO decision granting ex parte reexamination); Dkt. # 294 at 20. But the USPTO has not issued a final decision, and neither party has asked the Court to stay proceedings pending action by the USPTO.

For the reasons below, the Court concludes that, at this point, factual questions remain that preclude summary judgment.

1. Obviousness Legal Standard

"Obviousness is a question of law based on underlying facts." *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1047 (Fed. Cir. 2016) (en banc). These underlying factual determinations include: "(1) the scope and content of prior art; (2) differences between prior art and claims; (3) the level of ordinary skill in the art; and (4) objective indicia of nonobviousness." *PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1193 (Fed. Cir. 2014) (citing *Graham v. John Deere Co.,* 383 U.S. 1, 17–18 (1966)); *see also ZUP, LLC v. Nash Mfg., Inc.*, 896 F.3d 1365, 1371 (Fed. Cir. 2018). These four factors—known as the *Graham* factors—are always

relevant to the obviousness inquiry. *Apple*, 839 F.3d at 1048. Other related factual questions include "[w]hat the prior art teaches, whether a person of ordinary skill in the art would have been motivated to combine references, and whether a reference teaches away from the claimed invention." *Chemours Co. FC, LLC v. Daikin Indus., Ltd.*, 4 F.4th 1370, 1374 (Fed. Cir. 2021) (quoting *Meiresonne v. Google, Inc.*, 849 F.3d 1379, 1382 (Fed. Cir. 2017)). If a patent is obvious under 35 U.S.C. § 103, it is invalid.[4]

"A determination of obviousness requires finding that a person of ordinary skill in the art would have been motivated to combine or modify the teachings in the prior art and would have had a reasonable expectation of success in doing so." *Adapt Pharma Operations Ltd. v. Teva Pharms. USA, Inc.*, 25 F.4th 1354, 1365 (Fed. Cir. 2022) (citation and quotation marks omitted). "This requires 'identify[ing] a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.'" *Id.* (quoting *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007)). "The obviousness inquiry does not merely ask whether a skilled artisan could combine the references, but instead asks whether they would have been motivated to do so." *Adidas AG v. Nike, Inc.*, 963 F.3d 1355, 1359 (Fed. Cir. 2020) (citation and quotation marks omitted). "Fundamental differences between the references are central to this motivation to combine inquiry." *Id.* "A motivation to combine may be found

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[4] The requirement that a patent be nonobvious comes from 35 U.S.C. § 103:

> A patent for a claimed invention may not be obtained . . . if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.

35 U.S.C. § 103 (2006). The pre-America Invents Act (AIA) version of the statute applies because the '092 Patent was filed before the statute's effective date of March 16, 2013. *Warner Chilcott Co., LLC v. Teva Pharms. USA, Inc.*, 642 F. App'x 996, 1000 & n.2 (Fed. Cir. 2016).

explicitly or implicitly in market forces; design incentives; the interrelated teachings of multiple patents; any need or problem known in the field of endeavor at the time of invention and addressed by the patent; and the background knowledge, creativity, and common sense of the person of ordinary skill." *ZUP*, 896 F.3d at 1371.

Accordingly, "[a] party asserting that a patent is obvious 'must demonstrate by clear and convincing evidence that a skilled artisan would have had reason to combine the teaching of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success from doing so.'" *PAR Pharm.*, 773 F.3d at 1193 (quoting *In re Cyclobenzaprine Hydrochloride Extended–Release Capsule Patent Litig.*, 676 F.3d 1063, 1068–69 (Fed. Cir. 2012) (quotation marks omitted)); *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011) ("Obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination. Rather, obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements. . . ."); *Dome Pat. L.P. v. Lee*, 799 F.3d 1372, 1380 (Fed. Cir. 2015) ("If all elements of a claim are found in the prior art, as is the case here, the factfinder must further consider the factual questions of whether a person of ordinary skill in the art would be motivated to combine those references, and whether in making that combination, a person of ordinary skill would have had a reasonable expectation of success.").

But the Supreme Court has cautioned that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. . . . If a person of ordinary skill in the art can implement a predictable variation § 103 likely bars its patentability." *KSR*, 550 U.S. at 416. The Supreme Court has emphasized that the obviousness inquiry is "flexible" and requires application of common sense. *Id.* at 416, 420.

Finally, an issued patent is presumed to be valid. *Takeda Chem. Indus., Ltd. v. Alphapharm Pty., Ltd.*, 492 F.3d 1350, 1355 (Fed. Cir. 2007). And "[b]ecause a patent is presumed to be valid, 35 U.S.C. § 282, the evidentiary burden to show facts supporting a conclusion of invalidity, which rests on the accused infringer, is one of clear and convincing evidence." *Id*. "[S]ince we must presume a patent valid, the patent challenger bears the burden of proving the factual elements of invalidity by clear and convincing evidence." *St. Jude Med., Inc. v. Access Closure, Inc.*, 729 F.3d 1369, 1381–82 (Fed. Cir. 2013) (quoting *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1359 (Fed. Cir. 2007)). "This burden of proof never shifts to the patentee." *Id.*; *see also Novo Nordisk A/S v. Caraco Pharm. Labs., Ltd.*, 719 F.3d 1346, 1353 (Fed. Cir. 2013) ("[T]he burden of persuasion remains with the challenger during litigation because every issued patent is entitled to a presumption of validity.").

2. The Prior Art

Impinj argues that two prior art references—the ISO/IEC 15693-3 protocol and U.S. Patent No. 6,963,270 ("Gallagher")—render the '092 Patent obvious. Dkt. # 294 at 21. Neither party disputes that these two references qualify as "prior art" for obviousness purposes. Dkt. # 294 at 20.

The ISO/IEC 15693-3 standard is mentioned in the '092 Patent itself. *See* '092 Patent at 1:20–22. According to the '092 Patent, the ISO/IEC 15693-3 standard discloses many limitations in the Patent's claims. For example, the ISO/IEC 15693-3 standard discloses techniques for communicating between a "communication station" and "data carrier," performing "inventorization," and transmitting "identification data" and "useful data." '092 patent at 1:5–47. According to the '092 Patent, a "method having the abovementioned process steps is described in the ISO/IEC 15693-3 standard, and is therefore known." *Id.* at 1:20–22. But in variants of the known ISO/IEC 15693-3 standard, the transmission of specific useful data

is "performed after the inventorization procedure." *Id.* at 1:38–42. The '092 Patent purports to improve on this known method by transmitting the identification data and the specific useful data *at the same time*. *See id.* at 11:7–17.

Impinj concedes that the ISO/IEC 15693-3 standard does not disclose a communication protocol in which identification data and useful data are transmitted simultaneously. *See, e.g.*, Dkt. # 355 at 12. But Impinj says that Gallagher discloses a simultaneous transmission protocol. So between the two, Impinj says, the prior art fully teaches all claim limitations.

The Gallagher Patent—filed in 1999—is directed to RFID technology. *See* Dkt. # 285-10 (copy of Gallagher patent). Gallagher discloses an RFID reader that identifies multiple RFID tags (or "transponders") using an "an "anticollision protocol for simultaneously reading multiple RFID tags located in a field of an interrogating antenna or RFID reader and individually identifying the tags through an arbitration process." *Id.* at 2:27–31. One feature of Gallagher is the "fast read request," which provides for "fast reading of critical data." *Id.* at 2:42–45. According to the patent, "[t]he RFID reader or interrogator broadcasts commands to all transponders present in the detection field." *Id.* at 4:58–59. Each tag responds to the request by sending a "fast read response" that includes "its ID, and other data including tag parameters and fast read field data." *Id.* at 5:4-6. Gallagher summarizes that the "FRR [Fast Read Response] = Preamble + Transmission Counter + Parity + Tag Parameters + *Transponder ID* + *Fast Read Field* + CRC." *Id.* at 9:3–5 (emphasis added). Gallagher also says that "[a]fter a transponder completes transmission of its ID and, optionally, its fast read field, the reader sends commands called matching codes to the transponder to direct the transponder to either perform a read or write transaction, or to go into an inactive mode." *Id.* at 5:12–16. The purpose of this fast read request system is to "minimize[] communication overhead." *Id.* at 2:42–45.

3. Invalidity Analysis

The Court concludes that at this juncture, when viewed in the light most favorable to NXP, the evidence and reasonable inferences therefrom raise factual issues that preclude a determination of obviousness. Accordingly, the Court declines to invalidate the '092 Patent at this stage.

First, a reasonable jury could conclude that Gallagher does not adequately teach the simultaneous transmission of both identification data and *specific* useful data. *See Adasa Inc. v. Avery Dennison Corp.*, 55 F.4th 900, 910 (Fed. Cir. 2022) ("The question of what a reference teaches and whether it describes every element of a claim is a question for the finder of fact. Thus, summary judgment that a reference does not teach or suggest a particular claim element should be granted only if no reasonable juror could find the reference provides the necessary disclosure." (citation and quotation marks omitted)).

The Court construed "specific useful data (n×UDB)" to mean "some, but not all, useful data (UD)." Dkt. # 247 at 16. Gallagher seems to disclose some form of simultaneous transmission of identification and other data. But as detailed by NXP's expert, Dr. Madisetti (Dkt. # 333-8 at 12–13), it is not clear that Gallagher discloses simultaneous transmission of identification data along with a *subset* (some, but not all) of the useful data. How a subset of all useful data is transmitted appears to be an important feature of the '092 Patent: The specification described an embodiment in which *specific* useful data is transmitted using a "useful data start block," a "request data block," and "the number n of useful data blocks." '092 Patent at 10:9–15.

Impinj responds that it "does not need to contend that Gallagher discloses 'specific useful data'" because the ISO/IEC 15693-3 standard discloses the "specific useful data" limitation. Dkt. # 294 at 23. According to Impinj, "Gallagher discloses that 'useful data' is transmitted in

the fast read field along with the tag's identifier during inventory." *Id*. Based on the briefing before it, and drawing all reasonable inferences in favor of NXP, the Court disagrees. Even if the ISO/IEC 15693-3 standard would have taught a POSITA one way to send some, but not all, useful data, it does not necessarily follow that a POSITA could readily and straightforwardly modify Gallagher to do the same. The parties do not present much explanation about this point. And even if Gallagher does disclose simultaneous transmission of some, but not all, useful data, Impinj does not explain whether the '092 Patent's approach to this problem is the same as the Gallagher approach or the ISO/IEC 15693-3 standard approach. Without further explanation, the Court cannot confidently conclude that Gallagher teaches the "specific useful data" limitation.[5]

Second, according to NXP, the ISO/IEC 15693-3 standard and Gallagher use radically different communication protocols, meaning a POSITA would not think to combine them—or, implicitly, that it would be difficult or counterintuitive to combine them. Dr. Madisetti opined:

> The anticollision procedure of ISO/IEC 15693-3 is markedly different from the anticollision procedure of Gallagher. A person of ordinary skill in the art would not look to combine Gallagher, which uses transmission cycles of fixed length and wake-up slots determined by the bit sequences of a tag ID, with ISO/IEC 15693-3, which uses slots determined by EOF delimiters sent by the VCD and a determination of when to transmit a response based on comparing a mask received from the VCD with the VICC UID.

Dkt. # 285-11 at 42; *id.* at 39–43 (explaining the differences between the two anticollision protocols). Dr. Madisetti further opined that "[m]odifying the operation of the standard by importing features from a reference that approaches collisions in a substantially different approach would change the principle of operation of the standard." Dkt. # 333-8 at 13.

[5] Because the Court concludes that there is at least a dispute of fact as to whether Gallagher discloses the simultaneous transmission of "specific useful data," the Court finds it unnecessary to address Impinj's argument (Dkt. # 294 at 26–27) that the prior art discloses "processing means," as the phrase is used in claims 7 and 11 of the '092 Patent.

Crediting this expert opinion as true, a reasonable jury could conclude that a POSITA would not be motivated to combine the two references. *See Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1359 (Fed. Cir. 2017) (motivation to combine and the likelihood of successful combination are questions of fact). A reasonable jury could conclude that adapting Gallagher's simultaneous transmission protocol to work with the ISO/IEC 15693-3 standard would be unduly difficult or would not lead to success.

To be sure, the Court recognizes that this is a close question based on the arguments presented, and that several of NXP's other arguments do not pass muster. For example, it is immaterial, contrary to NXP's arguments (Dkt. # 332 at 26–28), that Gallagher describes the simultaneous transmission protocol as "optional." *See* Gallagher, at 5:12 ("After a transponder completes transmission of its ID and, *optionally*, its fast read field . . ." (emphasis added)). It matters only what Gallagher discloses.

Nor does Gallagher "teach away" from simultaneous transmission, as NXP suggests (Dkt. # 332 at 26–28). True, Gallagher discloses a "*tag-talk-first mode* of operation, wherein the transponder sends its data immediately upon power up, *hence eliminating all communication overhead*." Gallagher at 3:6–10 (emphasis added). According to NXP, this would have led a POSITA away from the fast-read simultaneous transmission protocol because the tag-talk-first mode produces even less "communication overhead." But "[a] reference that merely expresses a general preference for an alternative invention but does not criticize, discredit, or otherwise discourage investigation into the claimed invention does not teach away." *Meiresonne*, 849 F.3d at 1382 (citation and quotation marks omitted). A teaching expressing a "general preference for an alternative" does not teach away from the patent. *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009).

And NXP does not address any secondary considerations of nonobviousness in its brief. So the Court declines to consider any.[6]

Still, given the presumption of validity, the requirement that a challenger produce clear and convincing evidence of obviousness, and the factual issues described above, the Court cannot conclude that the '092 Patent is invalid as obvious at this juncture.

C. Infringement of the '092 Patent

Both parties cross-move for summary judgment on the '092 Patent. Dkt. # 282 at 9–18 (NXP's motion); Dkt. # 294 at 5–10 (Impinj's motion). NXP seeks summary judgment of direct infringement of claim 1, while Impinj seeks summary judgment of non-infringement of all claims in the '092 Patent. The central dispute concerns whether Impinj's products simultaneously return both an "identification data block" and "specific useful data" to the reader as required by the '092 Patent's claims. For the reasons below, the Court concludes that disputes of material fact preclude granting either party's motion for summary judgment on this issue.

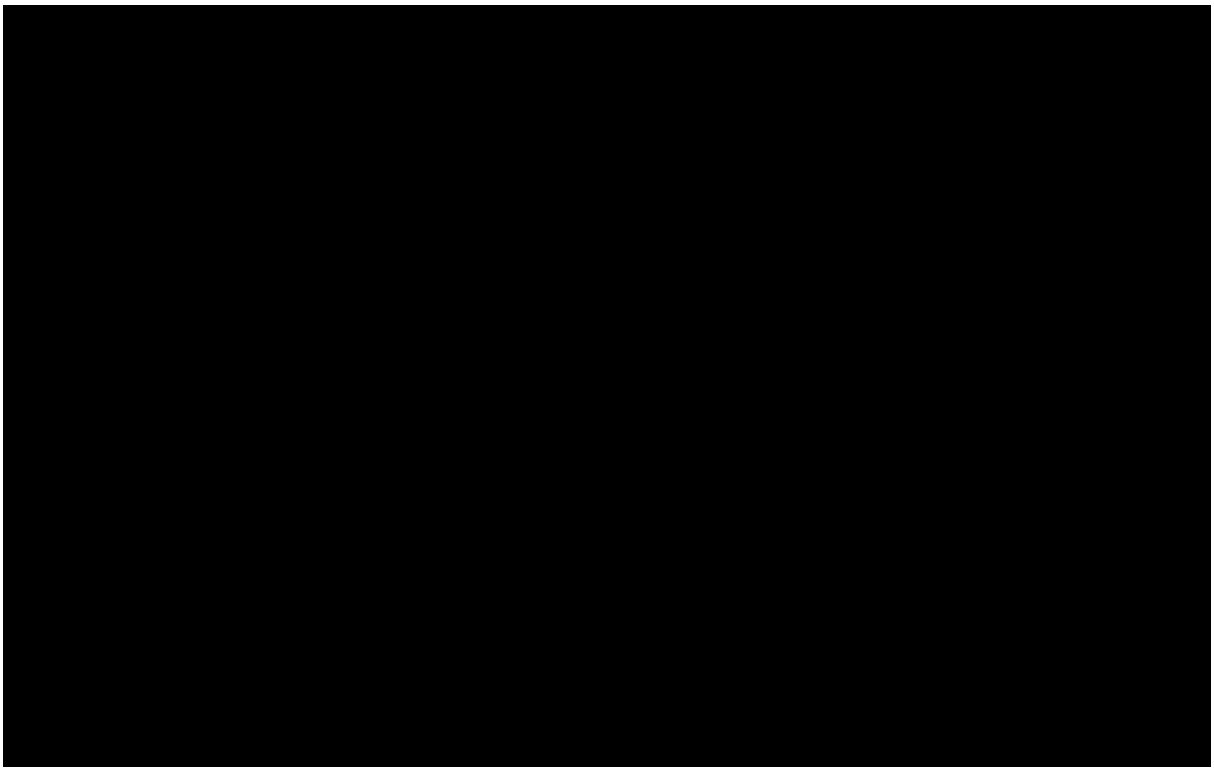
1. Background on the Accused Products

The accused products implement the "Gen2 protocol," an industry standard protocol for RFID communications. Dkt. # 283-4 at 6–7, 11–21. The Gen2 protocol requires that a tag's memory be separated into distinct memory blocks: Reserved memory, "EPC" (Electronic

[6] Additionally, NXP argues that Impinj failed to set forth a "prima facie case of invalidity" because neither Impinj's motion nor Impinj's expert report conducted a term-by-term analysis of whether the prior art discloses each limitation. Dkt. # 332 at 22–24. In its reply brief, Impinj explained that it inadvertently filed an incomplete version of Dr. Kenney's report. Dkt. # 355 at 10–11. Impinj further explained that the error has been corrected (Dkt. # 334), that NXP has had a copy of the complete report since November 2022, and that NXP suffered no prejudice from the mistaken filing. Dkt. # 355 at 10–11. The Court agrees with Impinj that this filing error does not itself justify denying Impinj's motion. And more importantly, NXP does not seriously contend that the prior art *did not* disclose the other, non-discussed claim limitations. The '092 Patent itself seemingly admits that—aside from the simultaneous transmission of specific useful data and identification data—the other claim limitations were well known in the art. *See* '092 Patent at 1:20–22 ("A method having the abovementioned process steps is described in the ISO/IEC 15693-3 standard, and is therefore known.").

Product Code) memory, "TID" memory, and User memory. Dkt. # 283-4 at 14. "TID" is defined as "Tag-identification or Tag identifier, depending on context." Dkt. # 285-1 at 21. TID memory must contain "sufficient information for an Interrogator to uniquely identify the custom commands and/or optional features that a Tag supports." *Id.* at 52. TID memory "may also contain Tag- and manufacturer-specific data (for example, a Tag serial number)." *Id.* at 52.

Each of the accused tag chips are Gen2 compliant. Dkt. # 283-4 at 6. But the accused products also contain what Impinj labels its "FastID" feature. Under the general Gen2 protocol, once a tag has been identified or selected, the tag "still requires a couple of commands to get the TID." Dkt. # 283-8 at 2. According to Impinj's own materials, FastID "short-cycle[s] the process of getting the TID." *Id.* With FastID, the tags "backscatter both their EPC and TID as part of their response to an ACK command from the reader." *Id.* In other words, the FastID system transmits both the EPC and TID data simultaneously. *See* Dkt. # 283-1 at 4 (Dr. Kenney stating that "[u]nder the Gen2 Specification, the sequence for accessing a TID requires a sequence of commands [], and FastID allows the TID to be read with fewer commands than that provided by the standard"). Impinj touted the "EPC+TID" feature of FastID as "2-3 times faster than previous methods." Dkt. # 281-13 at 6. An illustration of the comparison between a system with and without FastID is found below:



Dkt. # 283-8 at 2.

2. Infringement Analysis

The main dispute concerns whether Impinj's products simultaneously return both an "identification data block" and "specific useful data" to the reader as required by the '092 Patent's claims. While the parties agree that the "EPC" is part of the "identification data block" (Dkt. ## 282 at 15, 283-1 at 7), they dispute whether "TID" data is part of the "identification data block" or is "specific useful data."

NXP argues that the EPC is the "identification data block" and that TID data is "specific useful data." Dkt. # 282 at 14–25. NXP says that it is the EPC that is used to identify the tag during inventorization, not the TID data. *See id.* at 15–16 ("[T]he undisputed evidence shows that the Gen2 inventorization procedure does not use TID information to identify a tag within a population of tags—instead a tag is uniquely identified in the inventory process upon receipt of the tag's EPC."). If so, NXP says, Impinj directly infringes claim 1 because the accused

products rely on a method that simultaneously transmits a "characteristic identification data block" and "useful data" to the reader.

Impinj disagrees. *See* Dkt. ## 319 at 6–11, 294 at 5–10. Impinj argues that its FastID products do not return "specific useful data," and thus do not satisfy every limitation of claim 1. Impinj argues that TID data is part of the "identification data block," not "specific useful data." Impinj therefore says that because TID data is part of the identification data block, the accused products using FastID do not simultaneously transmit both identification data and specific useful data, and thus do not infringe.[7]

The parties' dispute largely (but not entirely) turns on the proper interpretation of the claims. NXP believes that to qualify as part of the "identification data block," the data must be used by the reader *during inventorization* to *uniquely identify* the tag, while Impinj says that the claim language contains no such limitation.

Though a somewhat close question, the Court believes NXP has the better argument: The "identification data block" described in the '092 Patent refers only to identification data used for identifying a tag during an inventorization-like procedure.

The specification and the history of the '092 Patent support this interpretation. The '092 Patent purports to improve upon a known method. In that known method, a reader first identified a tag during inventorization based on a tag's identification data, and then provided additional data in later communications. *See, e.g.*, '092 Patent at 1:38–42 (describing a variant of the ISO/IEC 15693-3 standard in which transmission of specific useful data is "performed after the inventorization procedure."). In other words, step one of the prior-art method involved inventorization in which a reader uniquely identified a tag using identification data. Step one of

[7] Aside from TID data, neither party briefs whether any other data in the accused tags could constitute "specific useful data."

the prior-art method presumably did not involve sending any information that might identify the tag, even if that information had nothing to do with the reader's need to uniquely identify the tag with which it was communicating. Step two of the prior art method then allowed additional data to be transmitted to the reader.

Against this backdrop, the "identification data block" described in the '092 Patent refers to the same type of identification data as transmitted during step one of the prior-art method: the identification data used by the reader to identify the tag during inventorization. The '092 Patent's purported innovation is combining steps one and two of the prior art method, and the most natural reading of the claims is that the identification data described within refers to the same identification data used during step one of the prior-art method.

If the term were construed to describe any identifying data, whether or not such data is used during inventorization for identification purposes, the typology developed by the patentee would make little sense. The patent divides all possible data into two discrete categories: (1) identification data (in the form of an "identification data block") and (2) other "useful data." It would be odd to divide the data in this way—creating a firm distinction between identifying data and all other data—unless the "identification data block" is somehow important to the invention (for example, because it is used to identify the tag during inventorization, like step one of the prior-art method). Otherwise, why distinguish between identification data and other data at all? To draw a rough analogy: If a patent described an invention in which "blue balloons" and "all other balloons" are held together using a clamping device, one would reasonably assume that blue balloons are distinctive or important to the invention itself.

And a tag might carry a wide array of "identification data" that could be used in vastly different ways. It is easy to imagine that much of the data on an RFID tag could be characterized as "identifying" in some way—the location coordinates of a tag could "identify" a tag in a

warehouse, or the "access level" of an employee's badge helps identify the employee. Drawing on an example from the accused products, Impinj states that it uses TID data—which is arguably a type of "identifying" data—"for tracing the IC or tag during manufacturing and throughout its lifetime and for tracing the item to which the tag is attached." Dkt. # 291 at 2. Impinj also states that both Impinj and its customers use TID data for various purposes—Impinj maintains a database of all TID data and uses that database to track sales and shipping history. *Id.* But it does not necessarily follow that *any* identification data is part of the "identification data block," even if that identification data plays no role in the communication/inventorization process. The mere fact that a user relies on TID data at some later time to identify a tag does not mean that it is part of the "identification data block."

To be sure, Impinj is correct that the claim language does not expressly state that "identification data block" refers only to identification data during inventorization. Impinj says that the plain meaning of "characteristic identification data block" is simply identification data that is characteristic of the tag. And the Court must be careful not to import additional limitations into the claim language. *See Laitram Corp. v. NEC Corp.*, 163 F.3d 1342, 1347 (Fed. Cir. 1998) (It is a "well-established principle that a court may not import limitations from the written description into the claims.").

But the Court concludes that "identification data block" refers to identifying data used to uniquely identify the tag to the reader during an inventorization-like procedure. In light of the purported novelty of the '092 Patent—combining the discrete steps of identifying the tag and transmitting other data into one, simultaneous transmission—a POSITA would interpret the phrase "identification data block" to refer only to the data used to identify the tag during an inventorization-like procedure, not any data used to identify in an abstract sense.

Given this claim construction, the Court must next consider whether TID data is part of the "identification data block" or is instead "specific useful data." If TID data is part of the "identification data block," then Impinj argues that the accused products do not return any "specific useful data," meaning that the accused products do not satisfy every limitation of the claim. The Court finds that there is at least a dispute of fact as to whether TID data is part of the "identification data block" or is instead "specific useful data." *See Beckson Marine, Inc. v. NFM, Inc.*, 292 F.3d 718, 724 (Fed. Cir. 2002) ("The "comparison [between an accused product and the Court's claim construction] is a question of fact.").

As an initial matter, in light of the Court's clarification of its construction, several of Impinj's arguments become immaterial. For example, it does not matter if TID data contains a "serial number" or otherwise contains data that could be labeled as "identifying" data. If this data is not used to identify the tag to the reader, it is not part of the characteristic identification data block. For the same reason, it does not matter if "TID" stands for "Tag-identification or Tag identifier, depending on context." Dkt. # 285-1 at 21; *see also Union Paper-Bag Mach. Co. v. Murphy*, 97 U.S. 120, 125 (1877) ("[I]n determining the question of infringement, the court or jury, as the case may be, are not to judge about similarities or differences by the names of things, but are to look at the machines or their several devices or elements in the light of what they do, or what office or function they perform, and how they perform it."). And it does not matter that Impinj or Impinj's customers may use TID data for some identifying function (say, tracking the products in a database or monitoring sales and shipping history). Because TID data is not being used during inventorization in the processes Impinj describes, it does not matter whether TID data is used to identify the tags in an abstract sense.

That said, the Court cannot grant either party's motion for summary judgment because factual disputes remain.

First, the Court remains uncertain whether the EPC *always* identifies the tag to the reader during inventorization, and whether TID data *never* identifies the tag to the reader during inventorization. NXP says that this is the case. *See, e.g.*, Dkt. # 282 at 15–16 ("[T]he undisputed evidence shows that the Gen2 inventorization procedure does not use TID information to identify a tag within a population of tags—instead a tag is *uniquely identified* in the inventory process upon receipt of the tag's EPC."); *id.* at 16 ("[I]n the context of Gen2, a 'specific tag' is 'uniquely identified' when the reader knows the EPC of that tag."). As NXP explains (citing testimony of Impinj's representative, Mr. Oliver), "an inventory session between the reader and a tag would include the first red query, the RN16 communication in green, the ACK in red, and then the EPC reply in green to the ACK . . . that is what we would call a singulation of a tag, *because the tag has been uniquely identified*." Dkt. #282 at 16.

But Impinj at least suggests that the EPC is *not* always used to uniquely identify the tag during inventorization. For example, Impinj says that "the EPC uniquely identifies a tag only if a 'serialized' EPC is used (*i.e.*, a unique serial number for the underlying product), as opposed to a generic product identifier." Dkt. # 319 at 10 n.3. Impinj also says that there "is nothing in the Gen2 protocol that provides that readers must use the EPC to identify the tags in the first place." *Id.* And Impinj says that the EPC can be modified by customers. Dkt. # 317 at 1. If true, the Court is uncertain about how the EPC uniquely identifies the tag to readers.

Second, there is a material dispute of fact about how *Impinj* (not its customers) use the EPC and TID data. NXP's motion seeks summary judgment of direct infringement of claim 1. Claim 1 is a method claim. And "[m]ethod claims are only infringed when the claimed process is performed, not by the sale of an apparatus that is capable of infringing use." *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1311 (Fed. Cir. 2006). Accordingly, NXP must show that the accused devices "*actually perform* [the] method" or that Impinj—not Impinj's customers—

"practices every step of the patented method." *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1219, 1221 (Fed. Cir. 2014).

Impinj notes that while it has performed some FastID testing in the United States, that testing "has *not* been done with a true EPC." Dkt. # 319 at 11. Instead, [redacted] *Id.* This creates a dispute of fact about the way Impinj uses its tags and whether it uses the EPC, TID data, or some other data to identify the tags.

Accordingly, the Court denies both motions for summary judgment of infringement (and non-infringement) of the '092 Patent.

V

ISSUES RELATING TO THE '951 PATENT

The parties cross-move for summary judgment as to infringement of the '951 Patent. *See* Dkt. # 282 at 18–25 (NXP's motion, seeking a judgment of direct infringement); Dkt. # 294 at 10–16 (Impinj's motion, seeking a judgment of non-infringement). For the reasons below, the Court grants Impinj's motion for a judgment of non-infringement and denies NXP's motion.

A. Additional Background: The '951 Patent

The '951 Patent describes a voltage multiplier circuit in which the voltage is "regulated." The voltage multiplier modifies the supply voltage to the desired level. Dkt. ## 220 at 13; 149 at 13. The '951 Patent describes a particular voltage multiplier circuit that "advantageously" enables multiplication of the voltage to a range of different voltages, including voltages both above and below the supply voltage. '951 Patent at 1:11–24, 1:49–63. The invention "control[s]" the generated voltage amplitude, producing a "regulated" voltage as it moves through the circuit components. *Id.* at 2:2–6.

Claim 1 of the '951 Patent (which for present purposes is representative of other claims) describes a voltage multiplier with several multiplier stages. The last multiplier stage provides a signal to a "feedback bias control circuit," which "generates a feedback signal . . . *based on a comparison between a voltage proportional to a voltage at the output of the second clocked multiplier stage and a reference voltage.*" '951 Patent at 10:50–59 (emphasis added). When broken down, the claim requires a feedback bias control circuit that generates a feedback signal by comparing two voltages: (1) "a voltage *proportional* to" the voltage at the output of the second multiplier stage, and (2) a "reference voltage." During claim construction, the Court construed "proportional" to mean a "constant ratio to another value that can be adjusted at different times." Dkt. # 247 at 49.

B. Infringement of the '951 Patent

The central dispute is whether the feedback circuitry within Impinj's accused products rely on a "proportional" voltage to generate the feedback signal.

NXP argues that the accused products satisfy each element of claim 1. NXP says that the accused products contain a feedback bias control circuit with a [redacted] Dkt. # 282 at 21. NXP also says that the "output of the second clocked multiplier stage" is [redacted] *Id.* at 21. And it says that there is a reference voltage [redacted] *Id.* Putting it all together, NXP says that [redacted] *Id.*

Impinj responds that [redacted] *not* proportional to [redacted] under the Court's construction (or any other reasonable construction of "proportional"). Dkt. ## 319 at 11–18, 294 at 10–16.

The Court agrees with Impinj. Based on the explanations provided by the parties, no reasonable jury could conclude that [redacted] voltage is "proportional" to the output [redacted]. It appears that there is no meaningful, correlative relationship between the two voltages, much less a proportional one. [redacted] As Impinj explains, [redacted] Dkt. # 319 at 15. Instead, the [redacted] node remains at [redacted] Dkt. # 283-1 at 22–24; Dkt. # 295-3 at 130 [redacted]; *id.* at 148.

For example, during the initial [redacted] period, the [redacted], while the [redacted]. Dkt. # 319 at 15–16. In the illustration below, a [redacted] (the blue line in the bottom graph) increases during the [redacted] period, while the [redacted] (the purple line in the second graph) [redacted]

[redacted]

Dkt. # 295-3 at 146. This is not a proportional relationship. NXP has not meaningfully rebutted this characterization of the accused products.

Proportionality requires, at minimum, a relationship between two variables. There does not appear to be a correlative relationship between [redacted] that satisfies this claim limitation.

NXP argues that even if there is no proportional voltage during the initial [redacted] period, the accused products still infringe at [redacted] *See* Dkt. # 343 at 7–8 [redacted] This, NXP says, creates "proportionality" because both the [redacted] become relatively steady and unchanging, creating a "constant" ratio between the two voltages. *See, e.g.*, Dkt. # 291 at 4. And the Federal Circuit has explained that "an accused device that sometimes, but not always, embodies a claim[] nonetheless infringes." *Broadcom Corp. v. Emulex Corp.*, 732 F.3d 1325, 1333 (Fed. Cir. 2013) (internal quotations omitted).

But the accused products do not satisfy the "proportional" limitation, even at [redacted]. While the two values may temporarily form a "proportion" or ratio at [redacted] (because they are constant), it does not necessarily follow that the two values are *proportional*. As described above, the common-sense understanding of "proportional" requires a relationship between variables. If two variables were treated as proportional simply because neither is changing, then any two variables would be proportional—at least momentarily—regardless of the relationship between them.

NXP does not explain how there is a proportional relationship between the [redacted] at [redacted] under that common-sense understanding of the term. NXP does not, for example, say that if the [redacted]

[redacted]. Nor does NXP say that [redacted] *See* Dkt. # 355 at 6 [redacted]. NXP's theory—that two variables are proportional simply because neither happens to be changing—defies the common-sense understanding of the word. Accordingly, there does not appear to be a proportional relationship between the [redacted].

NXP also argues that at [redacted], thus satisfying the Court's construction for the term 'proportional.'" Dkt. # 282 at 21. Dr. Kenney, Impinj's expert, admits that [redacted] Dkt. # 283-1 at 23–24. But the [redacted] *is* part of the circuit. *See id.* And it is the [redacted] *See id.* Thus, even if there is proportional voltage created by the [redacted]

Moreover, even if there are momentary periods during which the [redacted] form a proportional relationship (say, because the [redacted]), such fleeting proportionality would not seem to satisfy the function of the proportional voltage in the '951 Patent. The proportional voltage in the '951 Patent is used to provide the regulation circuit with information about the output of the charge pumps. If the [redacted] happened to be proportional for a few milliseconds, but then were not proportional moments later, it is hard to

understand how the [redacted] proportion could provide information about the output voltage level to the feedback circuit.

Finally, this conclusion tracks the way Impinj's accused products appear to function. According to Dr. Kenney, [redacted] Dkt. # 283-1 at 23. In other words, Impinj's accused products are designed to [redacted], while the '951 Patent is directed to controlling the output voltage.

Accordingly, because the accused products do not satisfy the "proportional" limitation (a requirement of every claim in the '951 Patent), they do not infringe. The Court grants Impinj's motion for a judgment of non-infringement of the '951 Patent and denies NXP's motion. Because the Court finds that Impinj's accused products do not infringe because they lack the "proportional" feature described in the claims of the '951 Patent, the Court declines to address Impinj's alternative argument based on the term "coupled" in claims 9, 13, 15, and 16. Dkt. # 294 at 14–16.

VI

ISSUES RELATING TO THE '097 PATENT

The parties raise two issues relating to the '097 Patent. First, NXP moves for summary judgment that the '097 Patent is valid given two prior art references. Dkt. # 282 at 25–26. Second, Impinj moves for summary judgment of non-infringement of the '097 Patent because it says that its accused devices do not contain a "voltage-raising means." Dkt. # 294 at 16–19. The Court grants NXP's motion and denies Impinj's motion.

A. Additional Background: The '097 Patent

The '097 Patent describes an improved approach to storing information on a tag. The invention described by the '097 Patent provides "a substantially longer period of time during which the stored information can be ascertained with high reliability." '097 Patent at 2:34–36.

The '097 Patent discloses "information-voltage generating means" that produce an "information voltage." *Id.* at 1:1–18. Claim 1 (which is representative for present purposes) describes a data carrier containing "information-voltage generating means that are arranged to receive a control signal . . . and that are arranged to generate the information voltage by using the control signal." *Id.* at 8:66–9:3. Claim 1 also states that the data carrier is "characterized in that the information-voltage generating means have voltage-raising means that are arranged to raise the voltage value of the control signal." *Id.* at 9:3–5.

The Court construed the "information-voltage generating means" term as a means-plus-function term subject to section 112, ¶ 6. Dkt. 247 at 33. The Court determined that the claimed function is "generating an information voltage by receiving and using a control signal that is of a voltage value that is at most equal to the value of the supply voltage." *Id.* And the Court determined the corresponding structure is "a charging-current generating stage, voltage-raising means, and voltage-limiting means" and equivalents. *Id.* at 33.

The Court also construed the term "voltage-raising means that are arranged to raise the voltage value of the control signal." The Court initially construed the term as a means-plus-function term subject to section 112, ¶ 6. Dkt. # 247 at 33–39. The Court stated that the function was "raising the voltage value of the control signal," and the corresponding structure was "a charge pump or the float-based structure described at 2:43–48 of the '097 Patent" and equivalents thereof. *Id.* But the Court modified that construction in a subsequent order. Dkt. # 375. After developing a deeper understanding of the technology at issue and Federal Circuit

case law, the Court found it necessary to modify that construction. The Court modified its construction to hold that the term is *not* a means-plus-function term, and that the term should be construed to mean "a circuit that raises the voltage value of the control signal." *Id.* at 8–9.

B. Validity of the '097 Patent

NXP moves for summary judgment that the '097 Patent is valid given two prior art references.[8] Dkt. # 282 at 25–26. In his report, Dr. Kenney (Impinj's expert), relied on at least two prior art references—U.S. Patent Number 5,933,386 ("Walker") and U.S. Patent Number 6,147,605 ("Vega")—to suggest that several claims in the '097 Patent were anticipated or obvious, and thus invalid. *See* Dkt. # 281-1 at 4 (public version of Dr. Kenney's report); Dkt. # 283 at 4 (sealed version of Dr. Kenney's report). NXP argues that neither Impinj nor Dr. Kenney identify a "charging-current generating stage" (which is part of the corresponding structure for "information-voltage generating means," as construed by the Court) within Walker or Vega. Dkt. # 282 at 25–26; *see also* Dkt. # 283 at 82–86 (Dr. Kenney's discussion of Walker); *id.* at 74–81 (Dr. Kenney's discussion of Vega).

Dr. Kenney's report does not identify which component or components in Walker or Vega disclose a "charging-current generating stage" (or equivalent). Aside from a statement acknowledging the Court's construction, Dr. Kenney does not otherwise mention a "charging-current generating stage." Impinj's brief discusses several components, such as a "write decoder (216)," "controller (218)," "charge pump (223)," and various forms of memory. Dkt. # 319 at 19. But Impinj never directly states that any of these components represent a "charge-current

[8] At oral argument, NXP clarified that it was not seeking a blanket judgment of validity, but rather only a judgment that the '097 Patent is not anticipated or obvious given the two specified prior art references, Walker and Vega.

generating stage" or equivalent.[9] Nor does Impinj's brief explain *how* any of the identified components serve as a "charging-current generating stage" or an equivalent. *Cf. DSS Tech. Mgmt., Inc. v. Apple Inc.*, 885 F.3d 1367, 1376 (Fed. Cir. 2018) ("conclusory statements and unspecific expert testimony" do not support obviousness finding (citation omitted)). And Impinj does not suggest that the '097 Patent is obvious despite the failure of Vega and Walker to disclose such a structure (say, based on the doctrine of inherency).

As Impinj explained in its claim construction briefing, the "function" of the "charging-current generating stage" is "creating the information voltage." Dkt. # 135 at 20. Neither Dr. Kenney's report nor Impinj's brief explains which structure(s) in Walker or Vega "create[] the information voltage." Moreover, the specification of the '097 Patent describes an embodiment of a charging-current generating stage "implemented in the form of a first n-channel field effect transistor." '097 Patent at 4:3–4. While the Court did not limit the corresponding structure to a particular *type* of charging-current generating stage, Impinj does not explain how any of the identified structures perform like any of the embodiments found in the '097 Patent. Merely listing technical components without explaining how they serve the same function as the claim limitation is not sufficient. *See Biotec Biologische Naturverpackungen GmbH & Co. KG v. Biocorp, Inc.*, 249 F.3d 1341, 1353 (Fed. Cir. 2001) ("It is not the trial judge's burden to search through lengthy technologic documents for possible evidence.").

Accordingly, the Court agrees with NXP: Impinj has not established a material dispute of fact as to whether Walker or Vega disclose a "charging-current generating stage." But the Court emphasizes the narrowness of its holding. The Court is *not* saying that the '097 Patent is valid:

[9] Impinj says that "[i]mplicit in NXP's argument is that it does not believe the prior art structures identified by Dr. Kenney are 'charging-current generating stage.'" Dkt. # 319 at 20. But Impinj never says that NXP's argument is *wrong*, or that any of the identified structures actually serve as a charging-current generating stage or an equivalent.

Other references could disclose a charging-current generating stage, or the patent could be obvious for other reasons. The Court is only saying that Impinj has not established the presence of a "charging-current generating stage" in Walker or Vega. And because the Court has modified its construction of the "voltage-raising means" term, the Court is not foreclosing the possibility that Walker, Vega, or any other reference renders that limitation (or any other limitation) obvious.

C. Non-Infringement of the '097 Patent

Impinj moves for summary judgment of non-infringement of the '097 Patent. Dkt. # 294 at 16–19. Impinj argues that the accused products lack the claimed "voltage-raising means" as construed by the Court. *Id.*

As noted above, the Court initially construed the "voltage-raising means" term as a means-plus-function term. The parties briefed the issue accordingly. But since then, the Court has modified its construction of the term. Dkt. # 375. The Court no longer construes the term as a means-plus-function term and instead interprets it to mean "a circuit that raises the voltage value of the control signal." *Id.* at 8–9. Thus, the parties' briefing does not directly address whether the accused products satisfy the Court's new construction.

That said, based on the parties' explanation of the accused products, the Court concludes that a reasonable jury could find that the accused products do, in fact, contain a "voltage-raising means." NXP's infringement contentions alleged that a "[redacted]" in the accused products satisfies the "voltage-raising means" limitation.[10] Dr. Madisetti stated during his deposition that [redacted] Dkt. # 333-1

[10] As previewed in a prior order (Dkt. # 375 at 11–12), and as will be explained more fully in a forthcoming order, the Court will not allow NXP to present its infringement theory that a [redacted] *combination* satisfies the voltage-raising means limitation. NXP's infringement contentions did not disclose this combination-based theory, and instead focused on a [redacted] theory.

at 3. And as conceded by Dr. Kenney (Impinj's expert), a [redacted] Dkt. # 327-1 at 9; *see also id.* [redacted].

Accordingly, the Court denies Impinj's motion. A reasonable jury could conclude that a [redacted] satisfies the voltage-raising means term—that is, a reasonable jury could conclude that the [redacted] is "a circuit that raises the voltage value of the control signal."

VII

ACCEPTABLE NON-INFRINGING ALTERNATIVES FOR PURPOSES OF DAMAGES

NXP moves for partial summary judgment that Impinj cannot meet its burden of proof to show the "availability and acceptability of any non-infringing alternatives" for damages purposes. Dkt. # 282 at 27–29. This issue closely relates to at least one other pending motion: Impinj's motion to exclude expert David A. Haas. *See* Dkt. ## 287, 296. That motion also discusses whether either NXP entity is entitled to lost profits .

Because the issues are related, the Court defers ruling on this portion of NXP's motion. The Court will address all damages-related issues in a forthcoming order.

VIII

CONCLUSION

For the reasons above, the Court:

(1) DENIES Impinj's motion as to invalidity of the '092 Patent.

(2) DENIES NXP's motion and DENIES Impinj's motion as to infringement of the '092 Patent.

(3) DENIES NXP's motion and GRANTS Impinj's motion as to infringement of the '951 Patent.

(4) GRANTS NXP's motion as to validity of the '097 Patent.[11]

(5) DENIES Impinj's motion as to non-infringement of the '097 Patent.

(6) RESERVES ruling on NXP's motion as to availability of acceptable, non-infringing alternatives for purposes of damages.

Dated this 28th day of March, 2023.

John H. Chun
United States District Judge

[11] But only on the narrow grounds stated within this order.